



*JFW*  
PATENT

Docket No. CA7031042001

**CERTIFICATE OF MAILING**

I hereby certify that this paper or fee is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Mail Stop Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on this date listed below.

Dated: MAY 8, 2007

*Mary R. Zimmerman*  
Mary R. Zimmerman

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

**In re Application for:**

Evgueni GOLDBERG et al.

Serial No.: 10/789,810

Filing Date: February 27, 2004

For: METHOD AND SYSTEM FOR SOLVING  
SATISFIABILITY PROBLEMS

Confirmation No.: 5639

Group Art Unit: 2129

Examiner: Omar F. Fernandez Rivas

**INFORMATION DISCLOSURE STATEMENT**

Mail Stop Amendment  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

In accordance with 37 CFR §§ 1.97 and 1.98, the items identified in this Information Disclosure Statement (IDS) are being brought to the attention of the Office. The items are listed on the attached form PTO/SB/08B. The Examiner is requested to make these documents of record.

The items identified in this IDS may or may not be "material" pursuant to 37 CFR § 1.56. The submission thereof by Applicant(s) is not to be construed as an admission that any such patent, publication or other information referred to therein is material or considered to be material (37 CFR § 1.97(h)), or even qualifies as "prior art" under 35 USC § 102 with respect to this invention unless specifically designated by Applicant(s) as such.

# **1. Timing of the Information Disclosure Statement:**

☒ This IDS is believed to be timely in that it is being submitted under 37 CFR § 1.97(b), that is (1) with the new patent application submitted herein (37 CFR § 1.97(a)); or (2) within three months of the filing date of the application, which is not a continued prosecution application filed under § 1.53(d) or (3) within three months of entry of the national stage as set forth in 37 CFR § 1.491; or (4) before the mailing of a first Office action on the merits; or (5) before the mailing of a first Office action after filing a request for continued examination under § 1.114. Thus, no fee is required.

☒ However, if the undersigned is in error in this regard, Applicant(s) respectfully requests that the Office consider this IDS as filed under 37 CFR § 1.97(c), if applicable, and charge the fee due under 37 CFR § 1.17(p) to the deposit account referenced below.

☐ However, if the undersigned is in error in this regard, Applicant(s) respectfully requests that the Office consider this IDS as filed under 37 CFR § 1.97(c), if applicable, and a statement under 37 CFR § 1.97(e) is included below, thus no fee is required.

☐ This IDS is being submitted under 37 CFR § 1.97(c), that is after mailing of a first Office Action on the merits, but before a Final Action under 37 CFR § 1.113 or a Notice of Allowance under 37 CFR § 1.311.

☐ Charge the fee due under 37 CFR § 1.17(p) to the deposit account referenced below.

☐ The fee due under 37 CFR § 1.17(p) is being concurrently submitted with the filing of an electronic IDS submission. Thus, no additional fee is required.

☐ A statement under 37 CFR § 1.97(e) is included below, thus no fee is required. In the event that this IDS is not received before a Final Action or a Notice of Allowance, then Applicant(s) respectfully requests that the Office consider the filing of these papers to be submitted under 37 CFR § 1.97(d) and charge the fee due under 37 CFR § 1.17(p) to the deposit account referenced below.

☐ This IDS is being submitted under 37 CFR § 1.97(d), that is after a Final Action under 37 CFR § 1.113 or a Notice of Allowance under 37 CFR § 1.311, but before payment of the issue fee. A statement under 37 CFR § 1.97(e) is included below. Charge the fee due under 37 CFR § 1.17(p) to the deposit account referenced below.

☐ This IDS is being submitted under 37 CFR § 1.97(i), that is after a Final Action under 37 CFR § 1.113 or a Notice of Allowance under 37 CFR § 1.311, but before payment of the issue fee.

**STATEMENT UNDER 37 CFR § 1.97(e):**

☐ That each item of information contained in the IDS was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the IDS; or

☐ That no item of information contained in the IDS was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the IDS was known to any individual designated in 37 CFR § 1.56(c) more than three months prior to the filing of the IDS.

**2. Copies of the Cited Items:**

☒ Copies of all of the items listed on the attached forms PTO/SB/08B are enclosed.

☐ Copies of only the following items listed on the attached forms PTO/SB/08A (Item No. \*) are enclosed.

☐ A copy of the following item listed on the attached form PTO/SB/08A (Item No. \*) is not enclosed. See 37 CFR 1.98(a)(2)(i).

☐ Copies of the following documents listed in PTO/SB/08A (Item Nos. \*) and PTO/SB/08B (Item Nos. \*) are not supplied as they were previously cited by the Office or submitted in Information Disclosure Statements in related applications (Application No. \*, filed \*) and relied upon in this application for an earlier filing date under 35 USC § 120. See 37 CFR § 1.98(d). The Examiner is requested to make these documents of record.

☐ Copies of the following items listed on the attached forms PTO/SB/08A (Item Nos. \*) and PTO/SB/08B (Item Nos. \*) were cited in a foreign examination report in a related case. A copy of the search report and the cited references not already of record in this application are attached hereto.

### 3. Concise Explanation of Relevance:

☒ A concise explanation of relevance of items listed on attached form PTO/SB/08B is not given.

☒ A concise explanation of Item 8 listed on Form PTO/SB/08B filed October 4, 2006, is that inventor Yakov Novikov has identified Item 8 as disclosing subject matter identical or similar to elements (b), (c), (d), (e), (f), and (g) from original claim 1. A concise explanation of Item 16 listed on Form PTO/SB/08B filed October 4, 2006, is that inventor Yakov Novikov has identified Item 16 as disclosing subject matter identical or similar to elements (a) from original claim 1. A concise explanation of Item 17 listed on Form PTO/SB/08B filed October 4, 2006, is that inventor Yakov Novikov has identified Item 17 as disclosing subject matter identical or similar to elements (b), (c), (d), (e), (f), and (g) from original claim 1. A concise explanation of Item 18 listed on Form PTO/SB/08B filed October 4, 2006, is that inventor Yakov Novikov has identified Item 18 as disclosing subject matter identical or similar to elements recited in original claims 5 through 10. A concise explanation of Item 19 listed on PTO/SB/08B is that inventor Yakov Novikov has identified Item 19 as disclosing subject matter identical or similar to elements (a), (c), (e) (f), and (g) from original claim 1 as well as the elements recited in original claims 16 through 30.

### 4. Related Applications:

☒ Applicant(s) brings to the Office's attention the following related application(s):  
U.S. Patent Application No. 11/397,230, filed April 3, 2006.

### 5. Conclusion:

Citation of the above documents shall not be construed as:

1. an admission that the documents are necessarily prior art with respect to the instant invention;
2. a representation that a search has been made, other than as described above;  
and
3. an admission that the information cited herein is, or is considered to be, material to patentability as defined in § 1.56(b).

It is respectfully requested that the Examiner indicate consideration of the cited references by returning a copy of the attached forms PTO/SB/08A and PTO/SB/08B with initials or other appropriate marks. In the unlikely event that the transmittal letter is separated from this document and the U.S. Patent Office determines that an extension and/or other relief is required, Applicant(s) petitions for any required relief including extensions of time and authorizes the Commissioner to charge the cost of such petitions and/or other fees due in connection with the filing of this document to Deposit Account No. 50-2518, referencing 7031042001. However, the Commissioner is not authorized to charge the cost of the issue fee to the Deposit Account.

Dated: \_\_\_\_\_

5/8/07

Respectfully submitted,

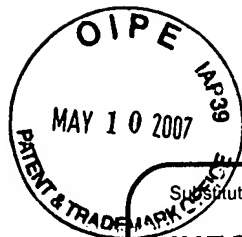
By: \_\_\_\_\_



Peter C. Mei  
Registration No. 39,768

**BINGHAM MCCUTCHEN LLP**

Three Embarcadero Center  
San Francisco, California 94111-4067  
Telephone: (650) 849-4870  
Facsimile: (650) 849-4800



PTO/SB/08B(07-05)

Approved for use through 07/31/2006. OMB 0651-0031

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number

Substitute for form 1449B/PTO

**INFORMATION DISCLOSURE  
STATEMENT BY APPLICANT**

(Use as many sheets as necessary)

Sheet

1

of

1

**Complete if Known**

Application Number	10/789,810
Filing Date	02/27/2004
First Named Inventor	Evgueni GOLDBERG
Art Unit	2129
Examiner Name	Fernandez Rivas, Omar F.
Attorney Docket Number	CA7031042001

**NON PATENT LITERATURE DOCUMENTS**

Examiner Initials *	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>
	1	GOLDBERG, E. "Testing Satisfiability of CNF Formulas by Computing a Stable Set of Points" Proceedings of the Conference Autated Deduction (CADE 2002) Copenhagen, DK, July 27-30, 2002, Vol. 2392, pp. 161-180	
	2	GOLDBERG, E. "Testing Satisfiability of CNF Formulas by Computing a Stable Set of Points" Annals of Mathematics and Artificial Intelligence, January 2005, Vol. 43, Issue 1-4, pp. 65-89	
	3	GOLDBERG, E. et al. "BerkMin: A Fast and Robust SAT-Solver" Proceedings of the design, Automation and Test in Europe Conference and Exhibition (DATE-2002) Paris, FR, March 4-8, 2002, pp. 142-149	
	4	GOLDBERG, E. "On Bridging Simulation and Formal Verification" Technical Report, University of California at Berkeley, February, 2007, CDNL-TR-2007-0212	
	5	Miroslav Velev's SAT Benchmarks, 3 pgs., located at: <a href="http://www.ece.cmu.edu/~mvelev/sat_benchmarks.html">http://www.ece.cmu.edu/~mvelev/sat_benchmarks.html</a>	
	6	GOLDBERG, E. "Determinization of Resolution by an Algorithm Operating on Complete Assignments" SAT-2006, pp. 90-05	
	7	ABRAMOVICI, M. et al. "Digital Testing and Testable Design, Wiley-IEEE Press, September, 1990, Title page, Table of Contents and Chapters 2 through 10 (pp. 9-455).	
	8	SELMAN, B. et al. "A New Method for Solving Hard Satisfiability Problems" The 10th National Conference on Artificial Intelligence (AAAI-92), San Jose, CA, July 12-16, 1992, pp. 440-446	
	9	SELMAN, B. et al. "Noise Strategies for Improving Local Search" The 12th National Conference on Artificial Intelligence (AAAI-94), Seattle, WA, July 31-August 4, 1994, pp. 337-343	
	10	SELMAN, B. et al. "Generating Hard Satisfiability Problems" Artificial Intelligence, 1996, Vol. 81, pp. 17-29	
	11	SETOVICH, E.M. et al. "SIS: A System for Sequential Circuit Synthesis" Technical Report, University of California at Berkeley, 1992. Memorandum No. UCB/ERL M92/41	
Examiner Signature		Date Considered	

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> Applicant's unique citation designation number (optional). <sup>2</sup> Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.